House Bill 1519 Early Childhood Project: Executive Summary and Policy Recommendations

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HOUSE BILL 1519 SUMMARY

Research has demonstrated strong relationships between high quality early childhood experiences and children's later performance across many developmental domains, including cognitive, linguistic, and socio-emotional functioning.[1] Compared to children with low quality early childhood experiences, children who have had high quality early childhood experiences are more prepared for school, perform better throughout their school careers, and have better adult outcomes, such as higher income potential and less involvement in crime.[2]

Factors that contribute to high quality experiences for children include well-trained staff with education specific to early childhood, well-compensated staff, low staff-turnover, low child-to-teacher ratios, and the use of developmentally appropriate curricula.[1] To provide high quality care, a well-developed system of funding and regulation is necessary. However, unlike the elaborate and well-established infrastructure that currently exists for our nation's K-12 educational system, no comparable system exists for early childhood education. Recognizing the importance of high quality education for their youngest citizens, many states have taken initial steps towards creating state level systems of early childhood care and education.

In 1998, the Missouri General Assembly passed House Bill 1519, which created the Early Childhood Care and Education Fund (HB1519). The purpose of the fund is to support early childhood programs in making improvements in quality. The Department of Elementary and Secondary Education (DESE) and the Department of Social Services (DSS) provides grants for a variety of purposes including: purchasing materials, supplies or equipment; minor renovations; salaries for new staff; professional development experiences; and accreditation fees.

> *"Beginning on the effective date of this act, the Department of Elementary and Secondary Education and the Department of Social Services shall initiate and conduct a four year study to evaluate the impact of early childhood development, education and care in this state. The study shall consist of an evaluation of children eligible for moneys pursuant to this subparagraph , including an evaluation of the early childhood development, education, and care of those children participating in such program and those not participating in the program over a four-year period. At the conclusion of the study, the Department of Elementary and Secondary Education and the Department of Social Services shall, within ninety days of conclusion of the study, submit a report to the General Assembly and governor, with an analysis of the study required pursuant to this subparagraph, all data collected, findings, and other information relevant to the early childhood development, education and care" (Missouri General Assembly, HB1519, 1998).*

THE STUDY

As part of the HB1519 law, a study was conducted evaluating the development and care of children participating in HB1519 funded programs compared to children participating in programs that did not receive funding. This summary presents the significant findings from the subsequent study. The full reports are available from DESE and DSS. Across the state of Missouri, 565 children from HB1519 programs participated in developmental assessments; 402 classrooms/homes in 265 early childhood programs were observed; and 331 parents, 155 administrators, and 348 teachers completed surveys. The purposes of this evaluation were to assess program quality, program improvement, and child outcomes. The study evaluated two primary research questions:

- **Do programs receiving HB1519 funds improve in quality over time?**
- **How do children in programs receiving HB1519 funds perform on cognitive and social measures compared to children attending other programs?**

KEY FINDINGS

- Programs that were rated as less than good at the beginning of the study and received HB1519 funds made significant gains in improvement.
- With the support of HB1519 funds, teachers who were in low quality programs at the beginning of the study improved their style of interacting with children such that they demonstrated more positive relationships with children and decreased their punitiveness and detachment.
- Children in higher quality programs performed better than children in lower quality programs on a variety of developmental assessments.
- Overall, children in HB1519 funded programs performed better on child assessments than a matched comparison group of children in non-HB1519 funded programs. Two of the findings were statistically significant: teachers' ratings of children's social skills and problem behavior.
- Teachers with college degrees were in higher quality programs than those without college degrees.
- Early childhood professionals identified low wages as the main reason they would leave the field.
- Early childhood professionals reported that the cost of training and the inability to leave work or family were the main obstacles to attending training opportunities.
- Teachers who make less than $20,000/year are more likely to work in programs of lower quality than teachers earning more than $20,000/year.
- Over a third of the children (36%) had attended more than three different early childhood programs since birth.

PROGRAM QUALITY OVER TIME

Method

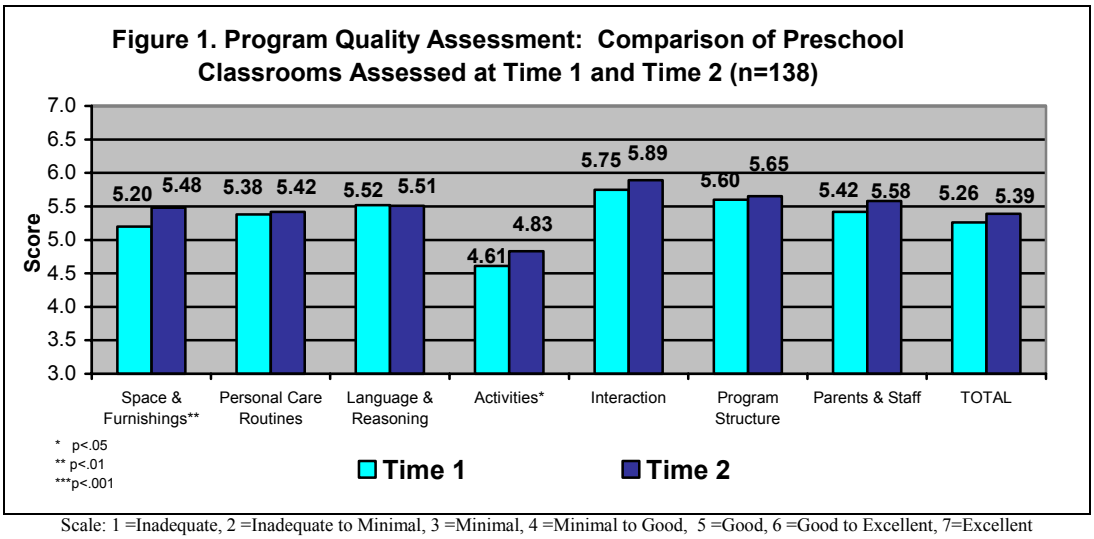
Program Observations

DSS	DESE
Time 1	Time 1
69 ITERS	216 ECERS-R
78 ECERS-R	
39 FDCRS	
Time 2	Time 2
24 ITERS	101 ECERS-R
37 ECERS-R	
35 FDCRS	

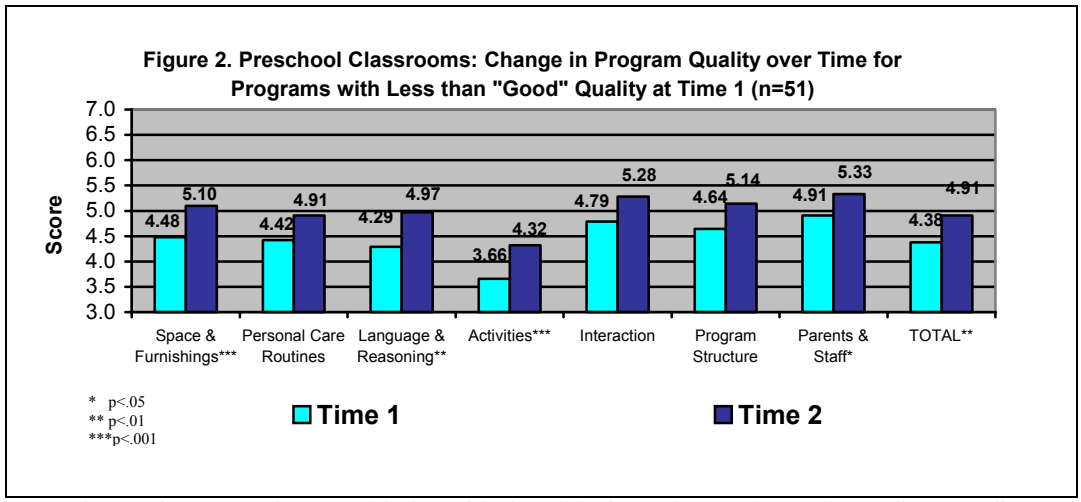
Depending on the type of child care setting, the quality of programs was assessed using one of the following three observational instruments: (1) Infant Toddler Environmental Rating Scale (ITERS)[3] for center-based infant and toddler classrooms, (2) Early Childhood Environmental Rating Scale-Revised (ECERS-R)[4] for center-based preschool classrooms, and (3) Family Day Care Rating Scale (FDCRS)[5] for home-based early childhood programs. The scales, as indicated on the figures are: 1-2.9, inadequate to minimal; 2-4.9, minimal to good; and 5-7, good to excellent. Observations were conducted twice, approximately one year apart. Observers from across the state were trained to use the instruments.[6] Observations of the quality of child-teacher interactions were made using the Caregiver Interaction Scale (CIS).[7] Information about the program (e.g., class size) and teachers (e.g., educational attainment, training, and income) were obtained from administrator and teacher questionnaires. All programs receiving funding were observed at Time 1, and a sample of those with continued funding were observed a second time (Time 2).

Quality Ratings of Preschool Programs

House Bill 1519 preschool programs (for ages 3-5) were rated as significantly higher on measures of quality at Time 2 than at Time 1, including *Space & Furnishings* and *Activities* (see Figure 1). House Bill 1519 preschool programs that were rated as less than "good" (<5 on the 7-point scale) at Time 1 made significant improvements at Time 2 on the overall measure of quality, and on the following subscales: *Space & Furnishings*, *Language & Reasoning*, *Activities*, and *Parents & Staff* (see Figure 2).



Scale: 1 =Inadequate, 2 =Inadequate to Minimal, 3 =Minimal, 4 =Minimal to Good, 5 =Good, 6 =Good to Excellent, 7=Excellent



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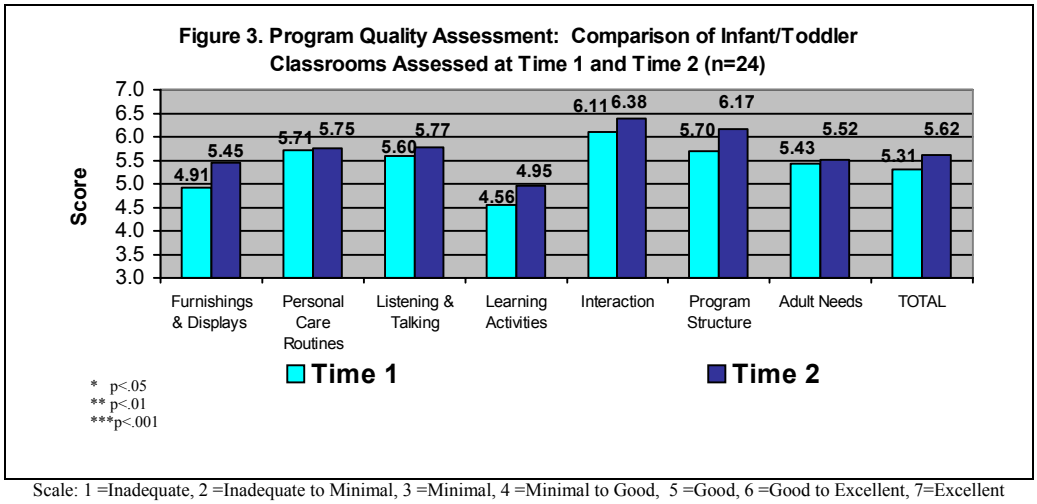
Quality Ratings of Infant and Toddler Programs

For all infant and toddler classrooms, increases in quality were seen across all subscales from Time 1 to Time 2, with none of the differences being statistically significant (see Figure 3). However, when examining just the programs that were rated as less than "good" at Time 1, despite the low sample size (n=6), programs made statistically significant improvements in quality on the overall measure of quality, as well as on the subscales of *Furnishings & Displays for Children* and *Personal Care Routines* (see Figure 4).



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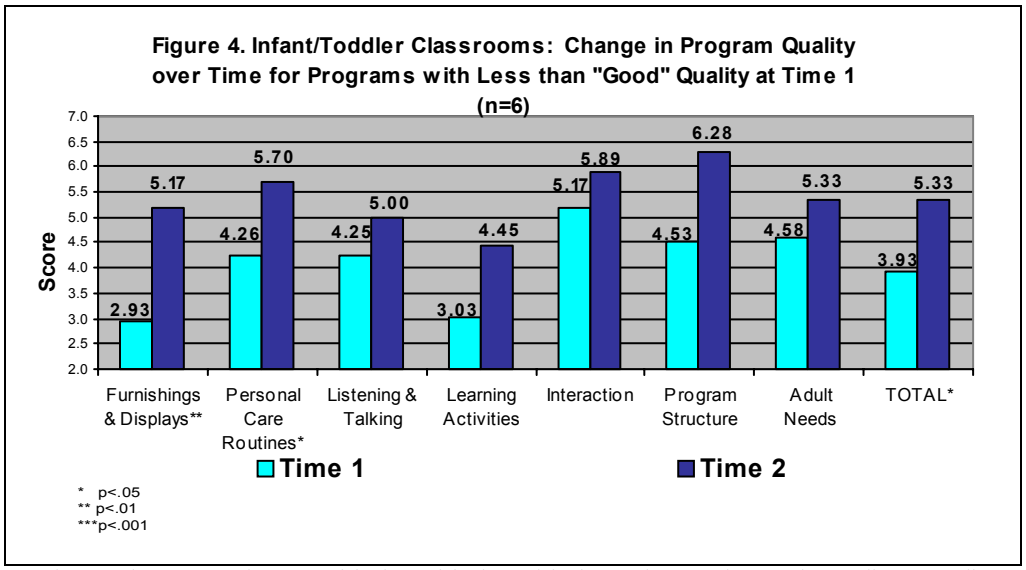
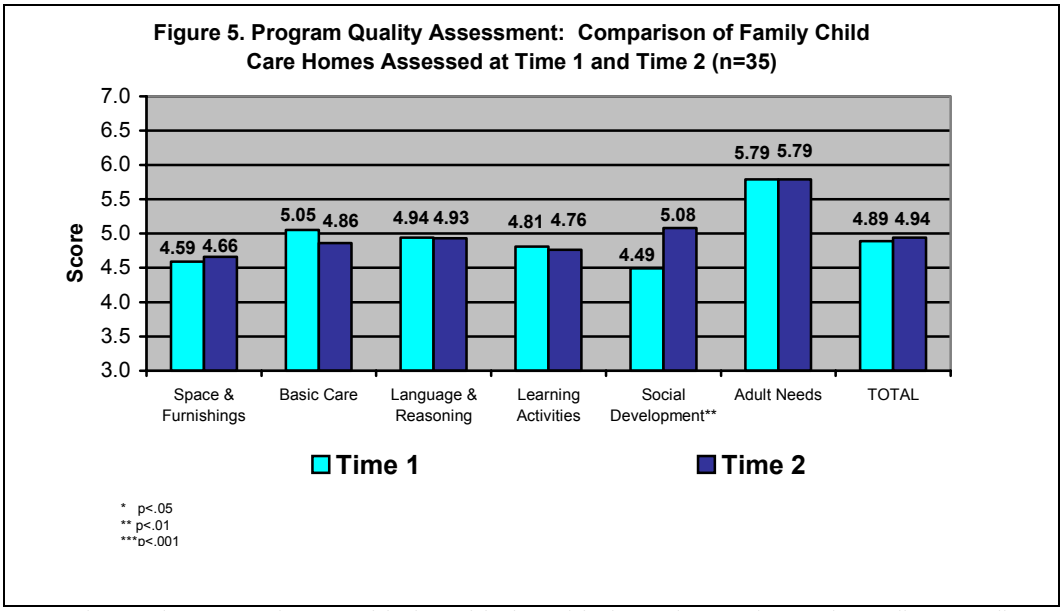


Scale: 1 =Inadequate, 2 =Inadequate to Minimal, 3 =Minimal, 4 =Minimal to Good, 5 =Good, 6 =Good to Excellent, 7=Excellent

Quality Ratings of Family Child Care Homes

HB1519 family child care homes had significantly higher quality ratings for *Social Development* at Time 2 than at Time 1 (see Figure 5). For family child care homes with less than "good" ratings at Time 1, all but one of the ratings were higher at Time 2 than Time 1, although none reached statistical significance (see Figure 6).



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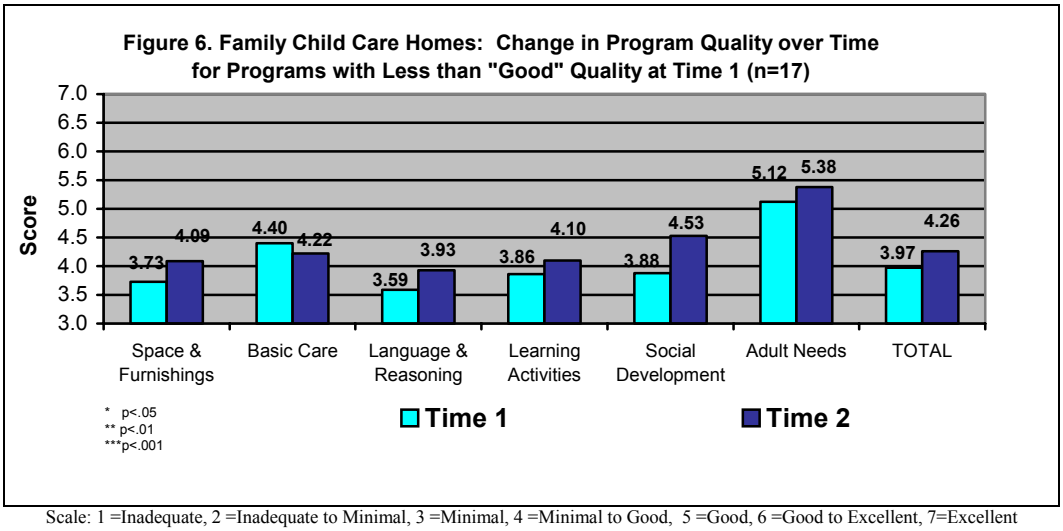


Scale: 1 =Inadequate, 2 =Inadequate to Minimal, 3 =Minimal, 4 =Minimal to Good, 5 =Good, 6 =Good to Excellent, 7=Excellent

Caregiver Interactions

Comparisons of HB1519 teachers at Time 1 and Time 2 showed little difference in ratings of caregiver interactions. It should be noted that the overall ratings were desirable at Time 1 and, therefore, significant improvement would not be expected (see Figure 7). When comparing teachers based on level of program quality at Time 1, however, teachers in programs rated as less than "good" at Time 1 showed significant improvements in caregiver interactions on three of the four subscales: *Positive Relationships* (the mean increased), *Punitiveness* (the mean decreased), and *Detachment* (the mean decreased) (see Figure 8).

Figure 7. Caregiver Interaction Scale: Comparison of HB-1519 Teachers at Time 1 and Time 2 (n=191)

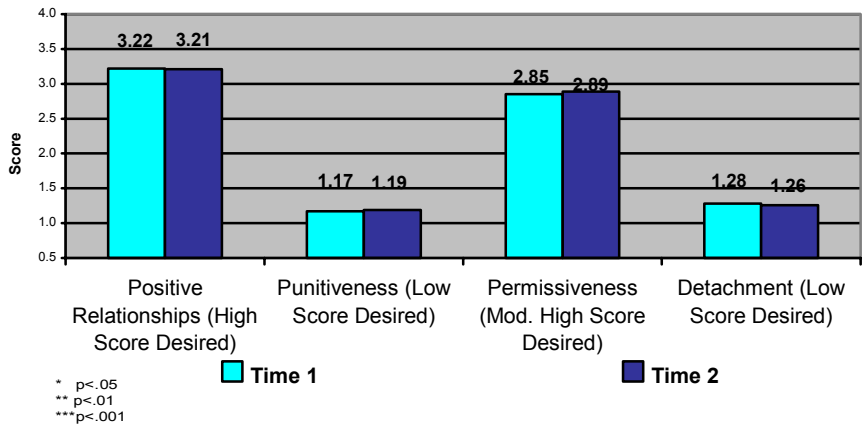
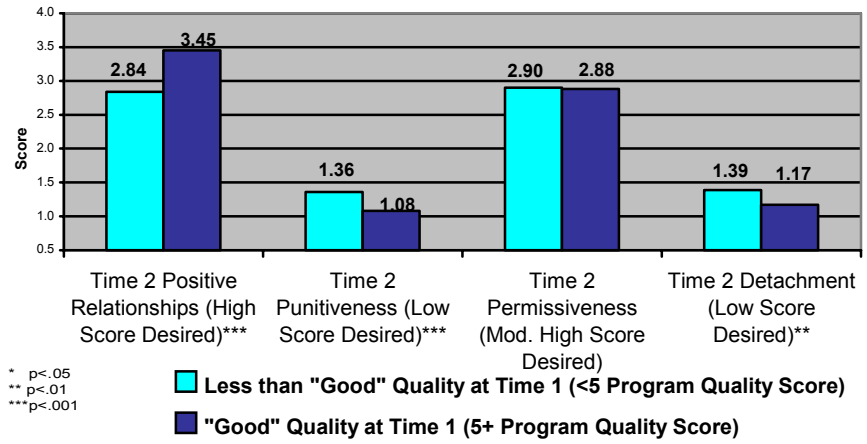


Figure 8. Caregiver Interaction Scale: Comparison of Teachers Based on Level of Program Quality at Time 1 (n=199)



WORKFORCE CHARACTERISTICS

Method

Questionnaires completed by 155 administrators, 53 infant/toddler teachers, 256 preschool teachers, and 39 family child care providers gathered information about each respondent's background, education, and career plans.

Education

Differences in level of education were found between center teachers and family providers in high quality programs (rated "good" or higher), compared to those in low quality (rated less than "good") programs. Center teachers from high quality programs had a mean of 15.3 years of education, compared to center teachers in low quality programs who had a mean of 14.9 years of education. Providers in high quality family child care homes had a mean of 14.1 years of education, while providers in low quality family child care homes had a mean of 12.9 years of education. Overall, preschool teachers (PT) reported more education than infant/toddler teachers (ITT) and family child care providers (FP) (PT = 15.2; ITT = 13.4, FP = 13.5).

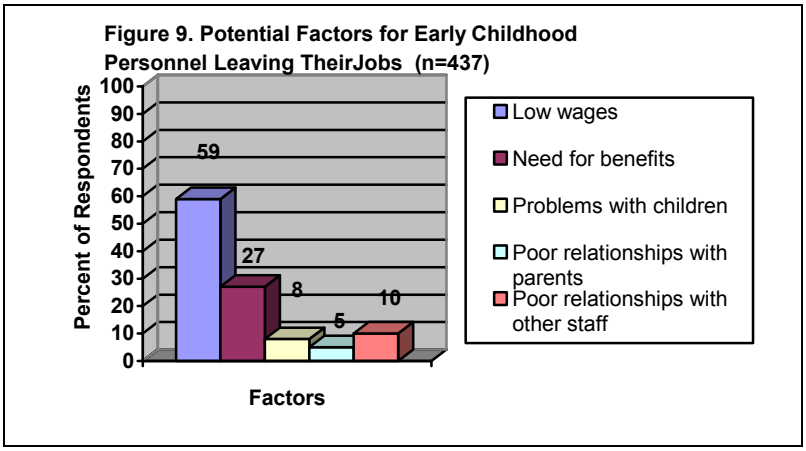
When comparing the overall quality of programs at Time 1 (from 1 = inadequate to 7 = excellent) with the education of teachers/providers, the following significant difference occurred ($p < .001$): teachers without college degrees (n = 119) received an average quality rating of 4.89 compared to teachers with college degrees (n = 238) who received an average quality rating of 5.35.

Salary

When comparing programs based on teachers/providers salaries, there was a significant difference ($p<.05$) in the quality. Teachers and family child care providers who earned more than $20,000/year (n = 153) had programs that averaged 5.31 on the quality scale. Those who earned less than $20,000/year (n = 132) averaged program quality scores of 5.09.

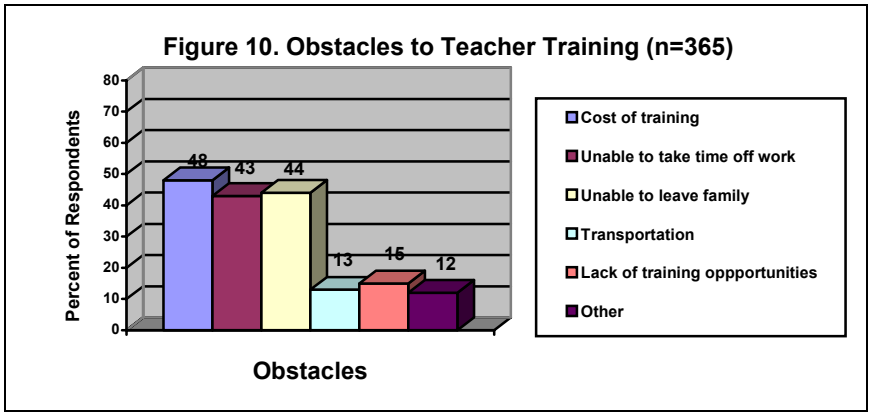
Reasons for Leaving

Staff turnover is an important factor affecting quality in early childhood programs. Programs with lower rates of turnover have been shown to have higher program quality.[8] Understanding why teachers leave is important for reducing the high turnover rates in the field of early childhood education. Over half of the respondents reported that inadequate wages would be the most likely reason for them to leave their positions (see Figure 9).



Obstacles to Training

Another factor critical to high quality in early childhood education is training. Early childhood personnel identified three major obstacles to training: the cost of training, being unable to take time off work, and being unable to leave their families to attend training.



CHILD OUTCOMES

Method

Based on the recommended principles from the National Education Goals Panel, a performance-based authentic assessment combined with two standardized measures was designed for the purpose of evaluating the developmental status of the children in the study. The assessment included components of the *Project Construct Assessment System,*[9] the *Peabody Picture Vocabulary Test-Third Edition (PPVT),*[10] the *Woodcock-Johnson III (WJ-III),*[11] *Story and Print Concepts,*[12] and the *Social Skills Rating System.*[13] The combined instruments assessed these five domains: mathematical knowledge and skills, conventional knowledge, receptive language, reading-related skills, and social skills. A total of 565 children from HB1519 programs were assessed, including 74 three-year-olds and 491 four- and five-year old pre-kindergartners.

Outcomes for HB1519 Children

The outcomes for HB1519 children are summarized in Table 1**.** In general, children were rated as average, or near the norm, for each measure. It is of interest that three-year-olds scored below the norm on receptive language. It is also noteworthy that teachers tended to rate three-year-olds as exhibiting more problem behaviors than parents did.

Table 1. Child Outcomes for Children in HB1519 Programs

Assessment Instrument (n = Three-Year-Olds; n = Pre-Kindergartners)	Three-Year-Olds Group Mean	Pre-Kindergartners Group Mean
Receptive Language (n = 74; n = 486)	93.3	102.5
Letter-Word Identification (n = 70; n = 490)	104.6	101.9
Applied Math (n = 70; n = 476)	105.5	102.0
Social Skills Ratings - Parent (n = 40; n = 290)[a]	97.5	102.4
Social Skills Ratings - Teacher (n = 62; n = 404)[a]	93.3	106.2
Problem Behaviors Ratings - Parent (n = 40; n = 291)[b]	96.5	96.8
Problem Behaviors Ratings - Teacher (n = 62; n = 404)[b]	106.3	99.6

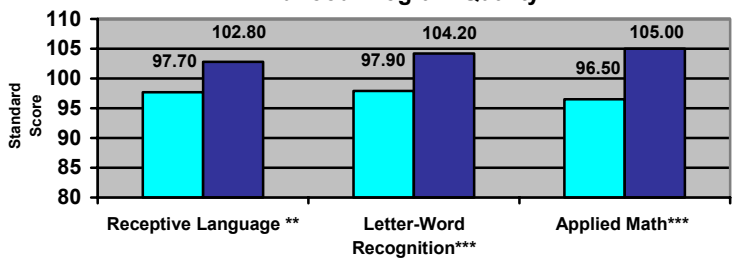
[a]Average score = 100; Higher score = better social skills
[b]Average score = 100; Lower score = fewer behavior problems

CHILD OUTCOMES IN RELATION TO PROGRAM QUALITY

Child Outcomes and Program Quality Ratings

Children in higher quality programs scored significantly higher on standardized measures of receptive language skills, letter-word recognition, and applied math skills than children in poor or mediocre programs (see Figure 11).

Figure 11. Association between Children's Standardized Child Assessment Scores and Early Childhood Program Quality

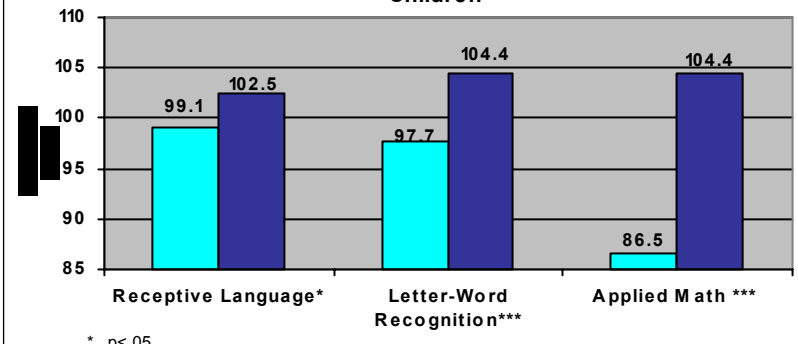


* p<.05
** p<.01
***p<.001

Child Outcomes and Teacher Interactions

Children whose teachers showed more positive interactions scored significantly higher in receptive language, letter-word recognition, and applied math than children whose teachers showed less positive interactions (see Figure 12).

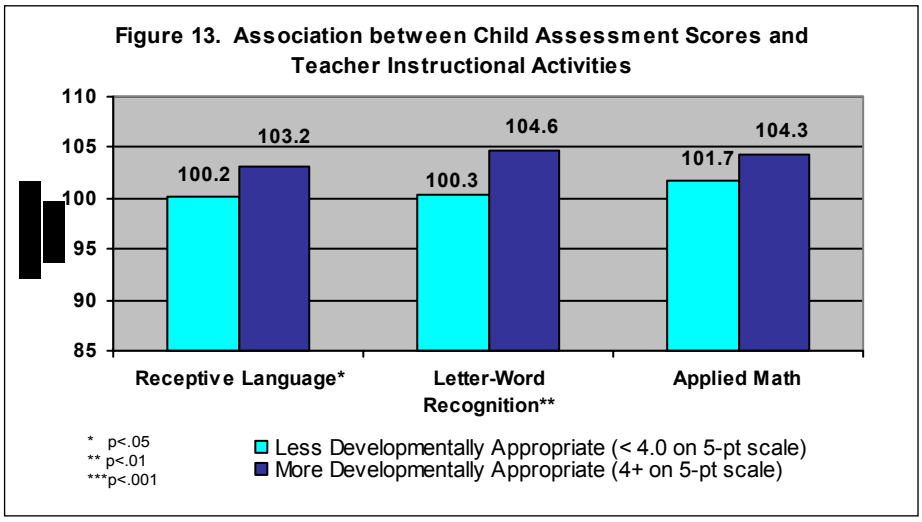
Figure 12. Association between Standardized Child Assessment Scores and Teacher's Relationship with Children



* p<.05
** p<.01
***p<.001

Child Outcomes and Developmentally Appropriate Teacher Practices

In addition, children scored significantly higher on receptive language and letter-word recognition when their teachers endorsed more developmentally appropriate practices (see Figure 13).



COMPARISONS OF HB1519 CHILDREN WITH CHILDREN IN OTHER PROGRAMS

Method

One of the requirements of HB1519 was to conduct a comparison between children in preschool programs funded by HB1519 and children in programs that did not receive funding from HB1519. In an ideal evaluation study, children would be randomly assigned to groups and their performance would be compared on a variety of achievement measures. However, random assignment was not possible, given that HB1519 funding decisions were based on a competitive grant-seeking process. The comparison group included preschool children in center-based programs and family child care homes that were participating in another study of early childhood programs being conducted by the authors, the Workforce Incentive Project. Additionally, recently enrolled 3-year-old children in HB1519 programs who had not attended the infant/toddler classroom during the prior year were selected as a comparison group for the children who had attended an infant/toddler classroom supported by HB1519. To control for differences between groups, a matched group design was used. A total of 77 matched pairs were created for the purposes of comparison.[14] The development of children in both groups was assessed using the same instruments and their performance on those was compared.

Comparison of Child Outcomes

Table 2 shows the mean standard scores for children in the treatment and comparison groups on the seven standardized instruments. The children in the treatment group outperformed their peers in the comparison group on every instrument. On two measures, the teacher ratings of social skills and problem behaviors, the differences between the two groups were statistically significant.

Table 2. Mean Standard Scores on Child Assessments for HB1519 Children and Comparisons

Assessment Instrument	HB1519 Group Mean	Comparison Group Mean
PPVT-III (Receptive Language) (n = 77)	108.4	105.2
WJ-III Letter-Word Identification (n = 77)	107.5	104.5
WJ-III Applied Problems (Math) (n = 77)	107.0	106.1
Social Skills - Teacher Form[a] (n = 63)	110.1*	106.3
Social Skills - Parent Form (n = 76)	105.1	103.2
Problem Behaviors - Teacher Form[b] (n = 64)	96.3*	101.2
Problem Behaviors - Parent Form (n = 76)	94.3	95.0

*Indicates a statistically significant difference, $p < .05$, one-tailed.
[a]Average score = 100; Higher score = better social skills
[b]Average score = 100; Lower score = fewer behavior problems

PARENT PERSPECTIVE

Method

A questionnaire distributed to the parents of assessed preschool children collected information on the various kinds of experiences children had in child care settings. This included their participation in early childhood programs and other community activities. A total of 329 parents completed questionnaires. Note that some parents omitted items, accounting for the differences in sample sizes.

Number of Child Care Arrangements

Parents identified how many child care arrangements they had used (Table 3). Thirty-six percent of parents reported having had the same child care provider, 28% reported two providers, 23% had used three providers, 9% had used four, and 4% had used five or more providers. When considering pre-kindergarten children only, 37% had at least three different arrangements. For three-year-olds, 23% had already had at least three arrangements.

Table 3. Number of Child Care Arrangements for Three-Year-Olds and Pre-Kindergartners (n=325)

	Number of Child Care Arrangements				
Age Group	One	Two	Three	Four	Five or More
Three-Year-Olds (n = 40)	20	11	8	0	1
Pre-Kindergartners (n = 285)	98	81	66	28	12
Total (n = 325)	118 (36%)	92 (28%)	74 (23%)	28 (9%)	13 (4%)

Locating Child Care

Parents identified the methods they used to locate child care. The two most common methods of finding care were getting a referral from a friend or relative (37.1%) or locating programs on their own (31%). Table 4 provides more details on the methods parents used to locate child care.

Table 4. How Parents Located Child's Current Program (n = 329)

Method of Finding Program[a]	Number Who Used This Method[b]	% Who Used This Method
Referred by a friend or relative	122	37.1
Found it myself	102	31.0
Referred by a public agency	30	9.1
Referred by school district/Parents As Teachers	27	8.2
Referred by an employer	22	6.7
Provider is a friend or relative	15	4.6
Referred by community agency, including a resource and referral agency	15	4.6
Yellow pages or newspaper ads	13	4.0
Parent works at the program	11	3.3
Another child previously enrolled in the program	10	3.0

[a]"Other" responses (24) included: newsletters, newspaper articles, only preschool in town, referred by speech therapist, open house, close to work, provided by employer, referred by last caregiver.
[b]Column totals do not equal 100 percent because respondents could choose more than one.

Reasons for Choosing Early Childhood Programs

Parents rated 22 factors on the degree to which each factor influenced their choices about child care providers. Responses were on a scale of 1 to 5 with 1 = *not important at all* to 5 = *very important.* Thirteen of the items were rated as *important* (4.0) to *very important* (5.0). The most important factors to parents in selecting a program for their children were reputation of the provider, providers having a warm and loving teacher style, and stimulating or enriching activities or programs. Table 5 shows parent responses in more detail.

Table 5. Reasons Rated by Parents as Being "Important" to "Very Important" for Choosing a Child Care Program (n = 329)

Item	Mean
The program has a reputation for good care	4.8
A warm and loving teacher style	4.8
The provider provides stimulating or enriching activities or programs	4.8
Training or credentials of the provider	4.5
Provider is someone you know and trust	4.5
Physical facilities and equipment for play and learning	4.5
Provider or program has similar values to yours	4.5
The program emphasizes self-expression	4.4
The number of children per provider	4.4
The program emphasizes academics, for example reading and math skills	4.4
The provider's discipline and guidance styles are consistent with your own	4.3
Rate of provider turnover or changes in staff	4.2
Flexible or convenient hours	4.2

POLICY RECOMMENDATIONS

A major purpose of the HB1519 funding is to help prepare more children to start kindergarten ready to succeed. The data from this study make it clear how we can support more children. Monies should not be spent to make good programs better. We need to add capacity to good programs so more children can attend those programs *and* we need to help programs of lower quality improve and become better. In addition, we know that many of Missouri's parents choose family child care programs for their children's care, yet these were the programs that made the least gains in quality. The data from this study would suggest that the funds need to be spent in more purposeful ways to improve the quality of family child care programs. This study also shows that the educational level of the teachers/providers and their wages are critical factors to providing high quality programs and, as a result, improving child outcomes. With these findings in mind, we propose the following policy recommendations:

1. HB1519 funding should be used to support programs that need to improve their quality.
The greatest impact of these funds was made on programs that were rated initially as less than "good." Funding opportunities should prioritize those programs that need it the most, i.e., programs of lower quality. We know that the quality of the program children attend affects their cognitive, linguistic, and socio-emotional functioning and, therefore, their readiness for school. Children who attend the lowest quality programs are at greater risk for difficulties when they enter school. When more children in Missouri attend high quality early childhood programs, more children will enter school ready to succeed.

2. Expand high quality programs to serve more children.
The data revealed that children in high quality programs scored higher on developmental assessments than their peers in lower quality programs. Programs that are already of higher quality should not be supported by HB1519 for the purpose of increasing their quality. These programs need support to increase their capacity to serve more children. Therefore, we suggest, that expansion funds be earmarked for "good" quality programs to expand and not be given to programs of lower quality to increase capacity. For communities with no programs, however, start-up funds should be available to enable them to begin serving children.

3. The state should help early childhood teachers/providers who do not have a college degree pay for intensive curricular training opportunities and/or college tuition.
Teachers with more formal education provide higher quality education. The mean educational level of teachers in high quality programs was 15.3 years, as compared to 14.9 years for teachers in programs of "below good" quality. For family child care providers the years of education were 14.1 and 12.9, respectively. One of the major reasons given as an obstacle to training was cost. There is currently some private money to support the cost of college tuition for early childhood teachers. In addition to private money, the state needs to support the formal education of early childhood teachers/providers. This could be done through supporting existing programs, such as the TEACH (Teacher Education and Compensation Helps) program and other local initiatives.

4. HB1519 should support family child care programs for specific purposes - primarily for educational support of providers.
Given that the quality of family child care programs did not improve over time, it appears that more guidelines for the use of funds might be needed when supporting family child care programs. Since family child care providers had lower levels of education, and it is known that teachers with higher levels of education provider higher quality educational experiences,[15] the department should consider the use of funds for ongoing professional development or assisting with college tuition for early childhood coursework. Spending the funds in these ways would be more likely to assure improvement in quality of family child care homes over time.

5. The state should support a wage supplement program for teachers/providers based on their educational levels.

The data from this study indicate that teachers/providers with higher education levels and those with higher salaries, as compared to those with less education and lower wages, provide higher quality education experiences for children. If turnover can be reduced by providing fairer wages, more children will benefit from higher quality programs and will, therefore, be more prepared to succeed in school. This could be accomplished through supporting the WIN (Workforce Incentive) Initiative or similar wage incentive programs.

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[1] National Research Council Institute of Medicine. (2000). From *Neurons to neighborhoods: The science of early childhood development.* Committee on Integrating the Science of Early Childhood Development. Jack P. Shonkoff and Deborah A. Phillips, eds. Board on Children, Youth, and Families, Commission on Behavioral and Social Sciences and Education. Washington D.C.: National Academy Press.

[2] Schweinhart, L, & Weikart, D. (2002). *Significant benefits: The High/ Scope Perry Preschool Study through age 27.* Ypsilanti, MI: High/ Scope Press.

[3] Harms, T.,Cryer, D., and Clifford, R. (1990) *Infant and Toddler Environmental Rating Scale.* New York, NY: Teachers College Press.

[4] Harms, T., Clifford, R., and Cryer, D. (1990). *Early Childhood Environmental Rating Scale- Revised Edition.* New York, NY: Teachers College Press.

[5] Harms, T., and Clifford, R.(1989) *Family Day Care Rating Scale*. New York, NY: Teachers College Press.

[6] For all observers, inter-rater reliability ranged from 89% to 94% for exact scoring on the 7-point scale. When looking at two observers scoring each item within on point of each other, they were consistent on 93% to 99% of the items.

[7] Arnett, J. (1989) Caregivers in day-care centers: Does training matter? *Journal of Applied Developmental Psychology, 10,* 541-552.

[8] Whitebook M., and Bellm, D. (1999). *Taking on turnover: An action guide for child care center teachers and directors.* Washington, D.C.: Center for the Child Care Workforce

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[14] When examining the characteristics of the treatment and comparison groups, it was found that the groups differed on important factors believed to be related to children's achievement. HB1519 programs scored higher on quality of programs and had teachers with more education and training. Programs in the comparison group had teachers with more experience and parents with more education. In order to control for these differences between the treatment and comparison groups, children from the comparison group were matched with children from HB1519 programs on the following variables: parental years of education, observed program quality, teacher's years of education, number of teacher training hours in the past year, and teacher's length of time in the field. This process created a set of 77 paired subjects that are similar on these important characteristics. Due to missing data from teacher and parent questionnaires, the number of matched pairs is smaller than the total number assessed.

[15] For a recent review see: Barnett (2003). Better Teachers, better preschools: Student achievement linked to teacher qualifications. *Preschool Policy Matters, Issue 2, March 2003*. National Institute for Early Education Research.